PROC. BIOL. SOC. WASH.
90(4), 1977, pp. 829–830

# ON THE GENERA *ECHINASTER* MUELLER AND TROSCHEL AND *OTHILIA* GRAY, AND THE VALIDITY OF *VERRILLASTER* DOWNEY (ECHINODERMATA: ASTEROIDEA)

Enrico Tortonese and Maureen E. Downey

*Abstract.*—Tortonese, E., Instituto Zooprofilattico, Genoa, Italy; and M. E. Downey, Department of Invertebrate Zoology, Smithsonian Institution, Washington, D.C. 20560.—An important taxonomic character, i.e., glassy tubercles on the principal plates, is discussed. The genus *Verrillaster* Downey is synonymized with *Echinaster* Mueller and Troschel, and the genus *Othilia* Gray is revived to accommodate those species of *Echinaster* in which glassy tubercles are present.

---

The genus *Echinaster* Mueller and Troschel (1840) includes a number of well-known seastars, distributed mainly in tropical and subtropical shallow waters of the world. The genus is still in need of an adequate definition, as are several of the species, chiefly those occurring in the Western Atlantic.

Patches of glassy tubercles occur on many principal plates of some of the species assigned to *Echinaster*. The patches are variable in size, but as far as we know, size differences are interspecific, no intraspecific variations having been observed. Such patches seem, therefore, to be a good taxonomic character, even if they are not always easily detected on poorly preserved specimens. The presence or absence of glassy tubercles has not been determined in all species. One of us (Downey, 1973) found them on most of the species of *Echinaster* from the Western Atlantic (*E. serpentarius*, *E. echinophorus*, *E. modestus*, etc.) and regarded them as a diagnostic feature of the genus. The same author consequently separated *E. spinosus* Verrill, which lacks patches of glassy tubercles, from the other Western Atlantic species, and erected a new genus, *Verrillaster*, for this species and any others that lack glassy tubercles.

One of us (Tortonese) has found that the separation of *Echinaster* and *Verrillaster* on such grounds is unacceptable, since glassy tubercles are absent from the type-species of *Echinaster*, *Asterias sepositа* Retzius (see Mortensen, 1925, re the name *sepositа* and its authorship). Careful examination of a number of specimens of *E. sepositus* of various sizes from several locations in the Mediterranean and the Eastern Atlantic (Roscoff and Senegal) revealed that no patches of glassy tubercles were present. *Verrillaster* (type-species *E. spinulosus* Verrill) thus becomes a junior synonym of *Echinaster*, as in both genera the type-species is devoid of glassy tubercles.

In general appearance, *E. sepositus* is rather similar to two Indo-West Pacific species, *E. purpureus* (Gray) and *E. luzonicus* (Gray), all three species having short spines. Examination has now shown that these Indo-West Pacific species also lack glassy tubercles. This condition supports Tortonese's (1954) suggestion that *E. sepositus* is more closely related to *E. purpureus* from the Red Sea and the Indian Ocean (and also to *E. luzonicus* from farther east) than to the Western Atlantic species. The more tropical fauna of the latter includes a complex of species or "forms" sharply contrasting with the single one (*E. sepositus*) found in the less tropical Eastern Atlantic.

For the genus comprising the species having glassy tubercles, we propose the oldest available name, *Othilia* Gray (1840) (type-species *Asterias echinophora* Lamarck: see Fisher, 1913). The genus *Othilia* includes the species *serpentaria*, *echinophora*, *senta*, *modesta*, and *brasiliensis*, all from the Western Atlantic, and possibly others.

It would be interesting to know if and how the presence of patches of glassy tubercles is correlated with other morphological features. If there is a correlation, the recognition of two genera would appear still more acceptable, but a revision of *Echinaster* on a world-wide basis is, of course, required.

## Literature Cited

Downey, M. E. 1973. Starfishes from the Caribbean and the Gulf of Mexico. Smithsonian Contrib. Zool. No. 126, vi + 158 pp., 2 figs., 48 pls.

Fisher, W. K. 1913. A new species of *Echinaster*, with a note on the name *Othilia*. Zool. Anz. Leipzig 42:193–196.

Mortensen, Th. 1925. The name *Echinaster sepositus* (Retzius), with remarks on Retzius' "Dissertatio." Ann. Mag. Nat. Hist. London, Ser. 9, 16: 546–547.

Tortonese, E. 1954. Zoogeografia e speciazione nel gen. *Echinaster* (Asteroidi). Boll. Zool. 21(2):419–428, 2 figs.